Current and future neutrino oscillation experiments will look for CP violation by studying neutrino interactions induced by intense neutrino beams. These measurements will require extremely precise understanding of both neutrino beams and neutrino interactions. Laura studies both of these topics -- neutrino beams and neutrino interactions -- with the goal of maximizing the potential of neutrino oscillation experiments. Specifically, she helps develop the beam simulation software for the Long Baseline Neutrino Experiment (LBNE) and uses this software to identify optimal LBNE beam designs. She also works to understand the dynamics of neutrino interactions with the MINERvA experiment, which was designed to make high precision measurements of neutrino-nucleus scattering. In particular, Laura studies a variety of antineutrino interaction known as "quasielastic scattering", a channel that is particularly important for measurements of CP violation.

For more, see:

http://arxiv.org/abs/1305.2234
http://arxiv.org/abs/1305.2243